

**THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant: Rainer Hartwig
Appl. No.: 10/670,445
Conf. No.: 3423
Filed: September 25, 2003
Title: CONTAINER SUPPORT DEVICE
Art Unit: 3632
Examiner: Steven M. Marsh
Docket No.: ECC-5764 (3712044-2909)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANTS' APPEAL BRIEF

Sir:

Appellants submit this Appeal Brief in support of the Notice of Appeal filed on May 5, 2009. This Appeal is taken from the Final Rejection mailed February 5, 2009.

I. REAL PARTY IN INTEREST

The real parties in interest for the above-identified patent application are Baxter International Inc. and Baxter Healthcare S.A. by virtue of an Assignment from the inventors of record to Edwards Lifesciences AG, the assignment recorded on November 5, 2003, at the United States Patent and Trademark Office at reel 014658, frame 0432, and by virtue of an Assignment from Edwards Lifesciences AG to Baxter International Inc. and Baxter Healthcare S.A, the assignment recorded on December 3, 2009, at the United States Patent and Trademark Office at reel 023600, frame 0575.

II. RELATED APPEALS AND INTERFERENCES

Appellants, Appellants' legal representative and the Assignee of the above-identified patent application do not know of any prior or pending appeals, interferences or judicial proceedings which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision with respect to the above-identified Appeal.

III. STATUS OF CLAIMS

Claims 21 to 28 are pending in the above-identified patent application. Claims 1 to 15 and 17 were withdrawn from consideration by the Examiner in the Final Office Action of February 5, 2009 ("Final Office Action")¹. Appellants respectfully disagree with Examiner's withdrawal and reserve the right to petition for reversal at a later date. Nevertheless, in a bona fide attempt to fully respond to the Final Office Action in this Brief, Claims 1 to 15 and 17 are not addressed directly. Claim 16 was previously withdrawn and Claims 18 to 20 and 29 were previously cancelled. The Final Office Action rejected Claims 21 to 28; however, Claims 27 and 28 depend directly from independent Claim 1, which was also withdrawn from consideration by the Examiner in the Final Office Action. Based upon the Examiner's withdrawal, Appellants submit that only Claims 21 to 26 stand substantively rejected based on the Final Office Action, and the rejections are presently appealed. Per MPEP 1205.02, a copy of appealed claims is attached in the Claims Appendix and includes the pending Claims 21 to 26 being appealed.

¹ Provided in the Evidence Appendix as Exhibit A

IV. STATUS OF AMENDMENTS

There are no amendments pending in this case, although Appellants respectfully submit that the amendment of Claim 1 proposed in the Response to Non-Final Office Action of September 24, 2008 should have been entered to place this case in condition for allowance. A Final Office Action was mailed on February 5, 2009. In the final Office Action, the Examiner withdrew Claims 1 to 15 and 17 from consideration as being directed to a non-elected invention according to 37 C.F.R. 1.142(b) and MPEP § 821.03, and maintained the 35 U.S.C. §102(b) anticipation rejection of Claims 21 to 28.

V. SUMMARY OF CLAIMED SUBJECT MATTER

A summary of the invention by way of reference to the drawings and specification for each of the independent claims is provided below. No claims are in means plus function format or in step plus function format.

Claim 21	Specification	Figures
21. A hemofiltration system comprising:	See, page 2, [0025]; describing device for extracting fluids from and delivering fluids to a patient, such as systems dedicated to blood filtration therapies, extra-renal replacement therapies, and the like.	1
a container support device for supporting a fluid container, wherein the container support device comprises:	See, page 1, [0005]; describing a container support device for supporting one or more material containers while removing fluids from and delivering one or more therapeutic agents to a patient.	1
an attachment member for coupling the container support device to a weight scale;	See, page 1, [0008]; describing an attachment member for coupling the container support device to a weight scale. See, page 2, [0026]; describing the attachment member 12 including an attachment member body 102 having an attachment member base 104 and at least one attachment member sidewall 106 in communication therewith.	1 2, 3
a joint body attached to the attachment member and configured to rotate about a vertical axis thereof, the joint body having a first joint member configured to couple to the attachment member in rotatable relation thereto and a second joint member configured to couple to the first joint member; a support body movably coupled to the second joint member; and	See, page 3, [0027]; describing the joint body 14 as including a first joint member 20 and a second joint member 22. The first joint member 20 may include a first joint body base 202 having at least one joint body sidewall 204 extending therefrom. See, page 3, [0027]; describing the first joint member 20 having a rotation body 216 positioned on a surface of the first joint body base 202. The rotation body 216 may be sized and configured to engage the rotation mount 114 located within attachment member recess 108 of the attachment member 12, thereby permitting the first joint member 20 to rotate within the attachment member recess 108 formed on the attachment member 12 when coupled thereto.	4 5

<p>at least one container support extending from the support body, wherein the container support is at least one of shaped or oriented to stably support the fluid container.</p>	<p>See, page 3 [0031]; describing four container supports 18 positioned on the container support body 312</p>	10
	<p>See, page 4 [0031]; describing the container supports 18 being a variety of different shapes including straight members, curved members, clips, hooks, bottle supports, cubs or similar shapes.</p>	9
Claim 24	Specification	Figures
<p>24. A hemofiltration system comprising:</p>	<p>See, page 2, [0025]; describing device for extracting fluids from and delivering fluids to a patient, such as systems dedicated to blood filtration therapies, extra-renal replacement therapies, and the like.</p>	1
<p>a container support device for supporting a fluid container, wherein the container support device comprises:</p>	<p>See, page 1, [0005]; describing a container support device for supporting one or more material containers while removing fluids from and delivering one or more therapeutic agents to a patient.</p>	1
<p>an attachment member for coupling the container support device to a medical fluid replacement device;</p>	<p>See, page 1, [0008]; describing an attachment member for coupling the container support device to a weight scale.</p> <p>See, page 2, [0026]; describing the attachment member 12 including an attachment member body 102 having an attachment member base 104 and at least one attachment member sidewall 106 in communication therewith.</p>	<p>1</p> <p>2, 3</p>
<p>a joint body attached to the attachment member and configured to rotate about a vertical axis thereof, the joint body having a first joint member configured to couple to the attachment member in rotatable relation thereto and a second joint member configured couple to the first joint member and move along a first arc A1;</p>	<p>See, page 3, [0029]; describing the joint body 14 as including a first joint member 20 and a second joint member 22. The first joint member 20 may include a first joint body base 202 having at least one joint body sidewall 204 extending therefrom.</p> <p>See, page 3, [0027]; describing the first joint body as configured to permit the second joint body member 22 to freely move along the arc A1 when coupled to the first joint body member 20.</p>	<p>4</p> <p>8</p>
<p>a support body movably coupled to the second joint member and configured to move along a second arc A2; and</p>	<p>See, page 3, [0027]; describing when the support body 16 is coupled to the second joint body member 22, the support body 16 is permitted to freely move along the arc A2. As shown, arc A2 is substantially perpendicular to arc A1.</p>	4

at least two container supports extending from the support body, wherein the container support is at least one of shaped or oriented to stably support the fluid container	See, page 3 [0031]; describing four container supports 18 positioned on the container support body 312	10
	See, page 4 [0031]; describing the container supports 18 being a variety of different shapes including straight members, curved members, clips, hooks, bottle supports, cubs or similar shapes.	9

Although specification citations are given in accordance with C.F.R. 1.192(c), these reference numerals and citations are merely examples of where support may be found in the specification for the terms used in this section of the Brief. There is no intention to suggest in any way that the terms of the claims are limited to the examples in the specification. As demonstrated by the references numerals and citations below, the claims are fully supported by the specification as required by law. However, it is improper under the law to read limitations from the specification into the claims. Pointing out specification support for the claim terminology as is done here to comply with rule 1.192(c) does not in any way limit the scope of the claims to those examples from which they find support. Nor does this exercise provide a mechanism for circumventing the law precluding reading limitations into the claims from the specification. In short, the references numerals and specification citations are not to be construed as claim limitations or in any way used to limit the scope of the claims.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 21 to 28 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,750,994 to Bieschke ("*Bieschke*")². Appellants respectfully submit that, although Claims 27 and 28 were included in the anticipation rejection of the Final Office Action, both of those Claims depend upon independent Claim 1, which was unilaterally withdrawn from consideration by the Examiner in the Final Office Action. According to the Examiner's withdrawal, Appellants submit that only Claims 21 to 26 stand substantively rejected under the anticipation rejection of the Final Office Action.

² Provided in the Evidence Appendix as Exhibit B.

VII. ARGUMENT

1. Claims 21 to 26 are not anticipated by *Bieschke*

(i) Legal standard for anticipation under 35 U.S.C. §102(b)

Under 35 U.S.C. §102(b), an invention is not patentable if it has been “patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application of patent in the United States.” For example, an invention is not patentable if the claimed subject matter is “anticipated” by the prior art. Anticipation requires that a single prior art reference discloses each and every limitation of the claimed invention. *Schering Corp. v. Geneva Pharms., Inc.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003). The references need only “be enabling and describe the applicant’s claimed invention sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention.” *ArthroCare Corp. v. Smith & Nephew Inc.*, 406 F.3d 1365, 1372 (Fed. Cir. 2005) (quoting *In re Paulsen*, 30 F.3d 1475, 1479 (Fed. Cir. 1994)).

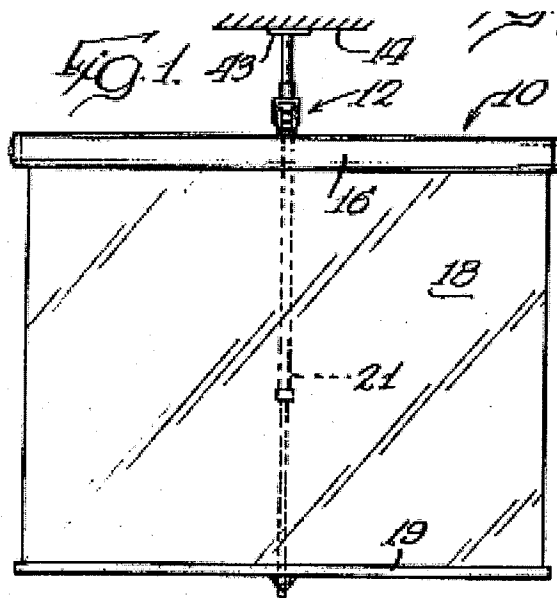
Thus, a prior art reference may anticipate without disclosing a feature of the claimed invention if that missing characteristic is necessarily present, or inherent, in the single anticipating reference. *Schering Corp.*, 339 F.3d at 1377 (citing *Continental Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991)). A party asserting that a patent claim is invalid under 35 U.S.C. §102(b) as being anticipated by a patent or a printed publication must show that each element of the claim in issue is found in the patent or printed publication. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771 (Fed. Cir. 1983).

(ii) The anticipation rejection

Claims 21 to 26 are rejected under 35 U.S.C. §102(b) as unpatentable over U.S. Patent No. 3,750,994 to *Bieschke*. (“*Bieschke*”). Regarding independent Claims 21 and 24, the final Office Action cites *Bieschke* as teaching each element of the independent claims, including at least one container support extending from the support body, wherein the container support is at least one of shaped or oriented to stably support the fluid container.

(iii) Appellants' traversal of the anticipation rejection regarding Claims 21 to 26

Appellants disagree with the above assertions and respectfully submit that the rejection is improper under 35 U.S.C. §102(b) under any reasonable interpretation of the applied art. *Bieschke* discloses a video projector screen assembly 10, which is mountable to a ceiling, and retractable into a casing 16. See, *Bieschke*, Fig. 1, reproduced below. A video screen 18 can be pulled down and propped open with a vertical standard 21, which runs from the casing 16 to the bottom of the screen 18 (near bar 19) when fully extended. The Examiner contends that this vertical standard 21 somehow could be viewed by one of skill in the art of medical devices as a container support which stably supports medical fluid containers for use in a system providing blood filtration therapies. More specifically, the Examiner submits that "container support" 21 is configured to support a fluid container, reasoning: "[t]he container support is oriented to stably support a fluid container (a tube could be secured to the support with an elastic fastener, such as a rubber band) and the container support is oriented at a non-perpendicular angel [sic] with respect to the vertical axis (it is parallel to it)." See Final Office Action, p. 3. Appellants respectfully disagree.



Bieschke, Fig. 1.

Appellants understand that, although the screen mounting device of *Bieschke* is completely irrelevant and nonanalogous to the present application, arguments that the alleged anticipatory prior art is 'nonanalogous art' are not germane to a rejection under section 102. (MPEP 2131.05, citing *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986)). However,

according to the Federal Circuit, the anticipatory reference must be enabling and describe the claimed invention sufficiently to have placed it in possession of a person of ordinary skill in the art. See *In re Paulsen*, 30 F.3d 1475, 1479 (Fed. Cir. 1994). Appellants submit that the video projection screen mounting device of *Bieschke* is not enabling and cannot describe, under any reasonable interpretation, Appellants' claimed hemofiltration container support device sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention, as is required under 35 U.S.C. § 102. Appellants further submit that to be a proper anticipatory prior art reference, a single reference must disclose each and every claimed element of the present application. As described below, the Examiner in the present application failed to meet this burden.

Bieschke does not disclose a rubber band or an elastic fastener of any type. According to the reasoning of the Examiner, the "container support" (standard, 21) is shaped or oriented to stably support a fluid container only if it is used with an elastic fastener, such as a rubber band. The Examiner fails to explain how the purported container support 21 could possibly be configured to stably support a fluid container without use of a rubber band. And it should be readily apparent that the containers themselves are not provided with such elastic fasteners. Because *Bieschke* does not disclose or even remotely suggest a rubber band or elastic fastener, the reference under Examiner's own hypothetical fails to support an anticipation rejection. That is, without a rubber band improperly read into *Bieschke's* video screen device, vertical standard 21 cannot stably support a fluid container as confirmed by Examiner's own hypothetical. Further, without a rubber band, standard 21 is also not shaped or oriented to stably support a fluid container, as is specified in independent Claims 21 and 24 of the present application.

Notwithstanding *Bieschke's* failure to disclose or suggest an elastic fastener or rubber band used to stably support a fluid container on the vertical screen assembly standard 21, as cited above, a prior art reference may still anticipate without disclosing a feature of the claimed invention if that missing characteristic is necessarily present, or inherent, in the single anticipating reference. See, *Schering Corp.*, 339 F.3d at 1377 (citing *Continental Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991)) (emphasis added).

Appellants respectfully submit that *Bieschke* does not inherently disclose any type of fastener – elastic, rubber band, bolt, pin, screw or otherwise – that would be secured to the standard 21 to stably support a fluid container. Inherent anticipation requires that the missing descriptive material must be necessarily present in the prior art reference, not merely probably

present or possibly present. *Rosco, Inc. v. Mirror Lite Co.*, 304 F.3d 1373, 1380 (Fed. Cir. 2002) (emphasis added). The Federal Circuit, in *In re Robertson*, stated that to establish inherency, the extrinsic evidence “must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.” 169 F.3d 743, 745, (Fed. Cir. 1999).

With *Bieschke*, Appellants fail to imagine what possible reason there could be for a rubber band or elastic fastener to be used to stably secure a fluid container to the standard 21. Such rubber band or fastener is clearly not necessary for the projector screen mounting device as described in *Bieschke* and would appear to serve only to get in the way of the operation of *Bieschke's* video screen. *Bieschke* accordingly does not make clear that the missing descriptive matter (i.e., any disclosure regarding an elastic fastener or rubber band) is necessarily present in its projection screen mounting device because nothing in *Bieschke* suggests that a fluid container should or could be fastened to the vertical support member 21 for any reason.

Bieschke discloses that the function of standard 21 is to hold the screen in extended position against the tension of a screen rewind spring (See, *Bieschke*, column 3, lines 10 to 12), or to be grasped manually to elevate the entire screen assembly and the lower bracket 45 to a position where the detent bolt 58 is free of the detent recesses 64, 65 and 66 so that the lower bracket 45 may be angularly adjusted. (See, *Bieschke*, column 4, lines 2 to 7). None of the above disclosure hints that standard 21 be alternatively shaped or oriented to stably support the fluid container.

Both independent Claims 21 and 24 each recite explicitly that at least one container support (at least two container supports, in the case of claim 24) extends from the support body, wherein the container support is at least one of shaped or oriented to stably support the fluid container. Appellants respectfully submit that *Bieschke* does not anticipate Claims 21 and 24 because an elastic fastener or rubber band is not explicitly taught, nor is it inherent in the reference. Appellants accordingly respectfully submit that the anticipation rejection of Claims 21 to 26 is in error and that the Board should find that these claims should be allowed.

Appellants would also like to traverse Examiner's interpretation of the claimed “fluid container” as a mere tube or tubing. Tubing carries fluid but is not considered by those of skill in the art to be a fluid container. Running a tube or line is simpler than supporting the weight of a fluid container, and doing so in a way that allows the fluid to readily flow from the container. To

the best of Appellants' knowledge, potentially life saving or life preserving medical fluid containers have not been supported using rubber bands.

Appellants note that withdrawn independent Claim 1 also includes the above-described feature which is not disclosed or inherently taught by *Bieschke*. The Examiner withdrew Claim 1 from consideration in the Final Office Action following a previous amendment unrelated to the feature discussed above. Appellants respectfully submit Claim 1 is also patentable over *Bieschke* with or without the previously disallowed amendment. Appellants accordingly respectfully submit that Claim 1 and its dependents even without the rejected amendment are also patentable at this time.

(iv) Appellants' traversal of the anticipation rejection regarding dependent Claim 26

In addition to the traversal of section (iii), Appellants specifically disagree with the Examiner's rejection of dependent Claim 26, asserting that *Bieschke* discloses that at least two container supports are positioned to be equidistant from the vertical axis of the joint body. In this rejection, the Examiner states: "there are at least two container supports equidistant from the vertical axis of the support body (the end caps on the end of 16, not numbered in the '994 patent [*Bieschke*], but described in U.S. Patent 3,191,663 to Bieschke [*"Bieschke II"*]³, which would be the 2nd and 3rd container supports...21 being the first." See Final Office Action, pages 3 to 4.

Under §102, the reference must teach, within the corners of a single prior art document, every element of the claimed invention arranged or combined in the same way as the claimed invention. *Net Moneyin, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) (emphasis added). The Examiner has referenced a second, different prior art reference to cure deficiencies in describing the elements he purported to be container supports. Appellants submit that, two references related to a similar invention and having the same inventor do not form a single reference for use together in a 102 rejection.

Even if *Bieschke II* was properly used in conjunction with *Bieschke* for the 102 rejection, Appellants submit that neither reference remotely suggests that the caps on the outer ends of casing 16 can be configured to stably support a fluid container. Appellants submit that no person of ordinary skill in the art of medical fluid delivery would hang medical fluid containers on the

³ Provided in the Evidence Appendix as Exhibit C

ends of a video projector screen hanging from a ceiling. Even if one would decide to hang fluid containers from each of the caps on casing 16, as the Examiner's hypothetical suggests, the outer diameter of the caps of *Bieschke* appear to share the outer diameter of the casing 16, to which they are affixed. The video screen is designed to hang at a level parallel to a ceiling or floor so that a video projection appears to the viewer properly in a room. The caps, therefore, could not serve as a retaining device to hold fluid containers or bags on the "container supports," and fluid containers would fall off of the casing 16.

For at least these reasons and the reasons stated above with respect to base Claim 24, Appellants submit that the anticipation rejection of Claim 26, improperly based on two references and not plausible even when analyzed with the Examiner's assertions, is in error, and the Board should find that this claim should be allowed.

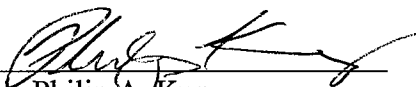
VIII. CONCLUSION

For at least the reasons provided above, Appellants submit that the pending claims are in a position for allowance. Specifically, Appellants respectfully submit that the Examiner has not established that *Bieschke* anticipates Claims 21 to 26.

For the foregoing reasons, Appellants respectfully request reconsideration of the above-identified patent application and earnestly solicit an early allowance of same.

Respectfully submitted,

K&L GATES LLP

BY 
Philip A. Kunz
Reg. No. 62,290
Customer No.: 29200

Dated: December 4, 2009

CLAIMS APPENDIX

Claim 1 (withdrawn): A hemofiltration system comprising:

a weight scale;

a container support device for supporting a fluid container, wherein the container support device comprises:

an attachment member for coupling the container support device to the weight scale;

a joint body attached to the attachment member and configured to rotate about a vertical axis thereof;

a support body secured to the joint body; and

at least one container support extending from the support body, wherein the container support is at least one of shaped or oriented to stably support the fluid container.

Claim 2 (withdrawn): The system of claim 1 wherein the attachment member comprises an attachment member base.

Claim 3 (withdrawn): The system of claim 2 further comprising a rotation mount positioned on the attachment member base and configured to have the joint body rotatably coupled thereto.

Claim 4 (withdrawn): The system of claim 1 wherein the joint body further comprises a first joint member and a second joint member coupled to the first joint member in movable rotation.

Claim 5 (withdrawn): The system of claim 4 wherein the first joint member further comprises a first joint body base having a rotation body located thereon.

Claim 6 (withdrawn): The system of claim 1 wherein the joint body further comprises a universal joint assembly.

Claim 7 (withdrawn): The system of claim 6 wherein the universal joint assembly further comprises a block and pin universal joint.

Claim 8 (withdrawn): The system of claim 6 wherein the universal joint assembly further comprises a single pivot joint.

Claim 9 (withdrawn): The system of claim 6 wherein the universal joint assembly further comprises a double pivot joint.

Claim 10 (withdrawn): The system of claim 6 wherein the universal joint assembly further comprises a multiple pivot joint.

Claim 11 (withdrawn): The system of claim 1 wherein at least two container supports are equidistant from a vertical axis of the support body.

Claim 12 (withdrawn): The system of claim 1 wherein the at least one container support

is coupled to the container support body in rotatable relation.

Claim 13 (withdrawn): The system of claim 1 wherein the at least one container support is configured to support a bag.

Claim 14 (withdrawn): The system of claim 1 wherein the at least one container support is movably coupled to the support body.

Claim 15 (withdrawn): The system of claim 14 wherein the support body comprises a container support body.

Claim 16 (withdrawn): The device of claim 15 further comprising a container support channel formed on the container support body and configured to receive the at least one container support therein.

Claim 17 (withdrawn): The system of claim 1 wherein the container support device is configured to couple to a system for providing blood filtration therapies.

Claim 18 is cancelled.

Claim 19 is cancelled.

Claim 20 is cancelled.

Claim 21 (previously presented): A hemofiltration system comprising:

a container support device for supporting a fluid container, wherein the container support device comprises:

an attachment member for coupling the container support device to a weight scale;

a joint body attached to the attachment member and configured to rotate about a vertical axis thereof, the joint body having a first joint member configured to couple to the attachment member in rotatable relation thereto and a second joint member configured to couple to the first joint member;

a support body movably coupled to the second joint member; and

at least one container support extending from the support body, wherein the container support is at least one of shaped or oriented to stably support the fluid container.

Claim 22 (previously presented): The system of claim 21 wherein the joint body comprises a universal joint assembly.

Claim 23 (previously presented): The system of claim 21 wherein the at least one container support is rotatably coupled to the support body.

Claim 24 (previously presented): A hemofiltration system comprising:

a container support device for supporting a fluid container, wherein the container support device comprises:

an attachment member for coupling the container support device to a medical fluid replacement device;

a joint body attached to the attachment member and configured to rotate about a vertical axis thereof, the joint body having a first joint member configured to couple to the attachment member in rotatable relation thereto and a second joint member configured to couple to the first joint member and move along a first arc A1;

a support body movably coupled to the second joint member and configured to move along a second arc A2; and

at least two container supports extending from the support body, wherein the container support is at least one of shaped or oriented to stably support the fluid container.

Claim 25 (previously presented): The system of claim 24 wherein arc A2 is perpendicular to arc A1.

Claim 26 (previously presented): The system of claim 24 wherein the at least two container supports are positioned to be equidistant from the vertical axis of the joint body.

Claim 27 (withdrawn): The system of claim 1, wherein the container support is oriented at a non-perpendicular angle with respect to the vertical axis.

Claim 28 (withdrawn): The system of claim 1, wherein the container support has a flared free end for support of the fluid container.

Claim 29 is cancelled.

EVIDENCE APPENDIX

EXHIBIT A: Final Office Action dated February 5, 2009.

EXHIBIT B: U.S. Patent No. 3,750,994 to Bieschke ("Bieschke").

EXHIBIT C: U.S. Patent No. 3,191,663 to Bieschke ("Bieschke II").

RELATED PROCEEDINGS APPENDIX

None.

EXHIBIT A



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,445	09/25/2003	Rainer Hartwig	ECC-5764	3423

30452 7590 02/05/2009
EDWARDS LIFESCIENCES CORPORATION
LEGAL DEPARTMENT
ONE EDWARDS WAY
IRVINE, CA 92614

EXAMINER

MARSH, STEVEN M

ART UNIT	PAPER NUMBER
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3632

MAIL DATE	DELIVERY MODE
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02/05/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<p align="center">Office Action Summary</p>	Application No. 10/670,445	Applicant(s) HARTWIG ET AL.	
	Examiner STEVEN M. MARSH	Art Unit 3632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 21-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is the fourth office action for U.S. Application 10/670,445 for a Container Support Device filed on September 25, 2003. Claims 1-17 and 21-28 are pending. Claim 16 is withdrawn.

Election/Restrictions

Claims 1-15 and 17 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Applicant is attempting to claim the combination of a weight scale and a container support device when only the subcombination of a container support device was previously claimed. The previous amendment to the preamble claiming a hemofiltration system was permitted because the body of the claim still only claimed the subcombination of the container support device.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 1-15 and 17 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 3632

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21-28 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S.

Patent 3,750,994 to Bieschke. Bieschke discloses a support device that could support a fluid container, with an attachment member (42, 43) with an attachment member base (43) that can couple a container support device to a weight scale. There is a joint body (30, 45) with first (30) and second (45) joint members attached to the attachment member and configured to rotate about a vertical axis thereof. There is also a container support body (23) secured to the joint body and at least one container support (21) extending from the support body and coupled to the body in rotatable relation. The container support is oriented to stably support a fluid container (a tube could be secured to the support with an elastic fastener, such as a rubber band) and the container support is oriented at a non-perpendicular angle with respect to the vertical axis (it is parallel to it). The support also has a flared free end (tab 25) that could support a container.

There is a rotation mount (34,35,42) positioned on the attachment member base and configured to have the joint body rotatably coupled thereto. The second joint member is movably coupled to the first joint member in movable relation and the first joint member has a first joint body base (32) with a rotation body (54,58) located thereon. There is a universal joint assembly with multiple (54, 58) block and pin universal joints and there are at least two container supports equidistant from the vertical axis of the support body (the end caps on the end of 16, not numbered in the

Art Unit: 3632

'994 patent, but described in U.S. Patent 3,191,663 to Bieschke, which would be the 2nd and 3rd container supports... 21 being the first). The support device is configured to be coupled to a system for providing blood filtration therapies. The second joint member is configured to move along a first arc A1 and the support body is movably coupled to the second joint member and configured to move along a second arc A2, the arc A1 being perpendicular to A2.

Response to Arguments

Applicant's arguments filed September 24, 2008 have been fully considered with respect to claims 21-28, but they are not persuasive. In response to applicant's arguments, element 45 is "movably coupled" to bracket 23. Using the broadest interpretation of "movably coupled" two objects that are coupled together in such a way that they can be moved relative to each other would meet the limitation. In the instant case, element 45 and bracket 23 can be moved relative to each other by simply loosening the nut on the bolt and moving the element or the bracket.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

Art Unit: 3632

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Marsh whose telephone number is (571) 272-6819. The examiner can normally be reached on Monday-Friday from 8:00AM to 4:30 PM. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-3600. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

/S. M. M./
Steven Marsh
Examiner, Art Unit 3632

/Anita M. King/
Primary Examiner, Art Unit 3632

January 30, 2009

EXHIBIT B

- [54] MOUNTING DEVICE FOR PROJECTION
SCREEN
[75] Inventor: **Hillard J. Bieschke, Itasca, Ill.**
[73] Assignee: **Knox Manufacturing Company,**
Wood Dale, Ill.
[22] Filed: **Feb. 24, 1972**
[21] Appl. No.: **229,130**
[52] U.S. Cl. **248/324, 160/24, 248/278**
[51] Int. Cl. **G03b 21/56**
[58] Field of Search **248/324, 325, 326,**
248/278, 279, 284, 287, 291, 293, 292;
160/351, 24, 368, 26, 23; 287/14

[56] **References Cited**
UNITED STATES PATENTS

3,362,671	1/1968	Johnson	248/324
2,653,036	9/1953	Creel et al.	248/293 X
3,567,168	3/1971	Jennings	248/284
3,144,899	8/1964	Stewart et al.	160/24
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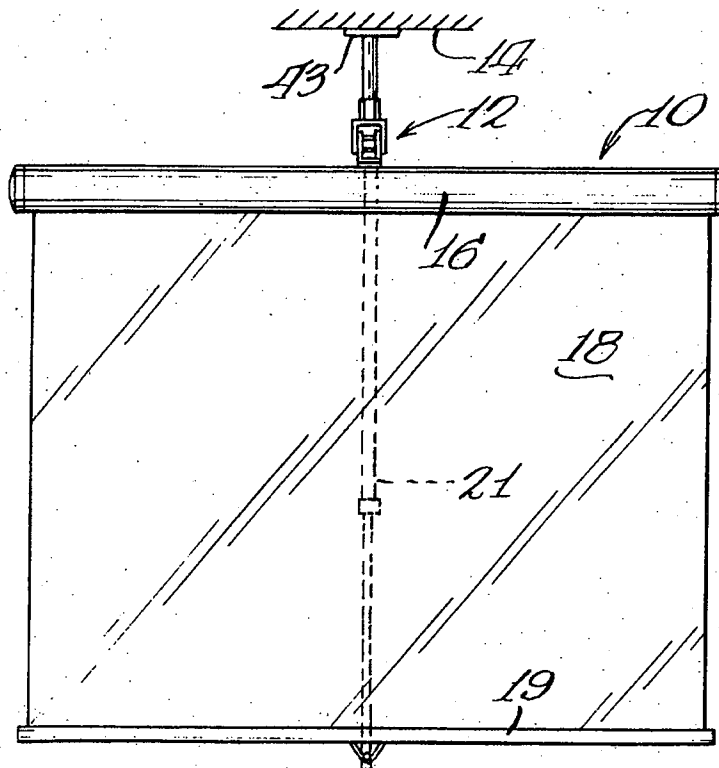
1,717,185 6/1929 Caldwell 248/286

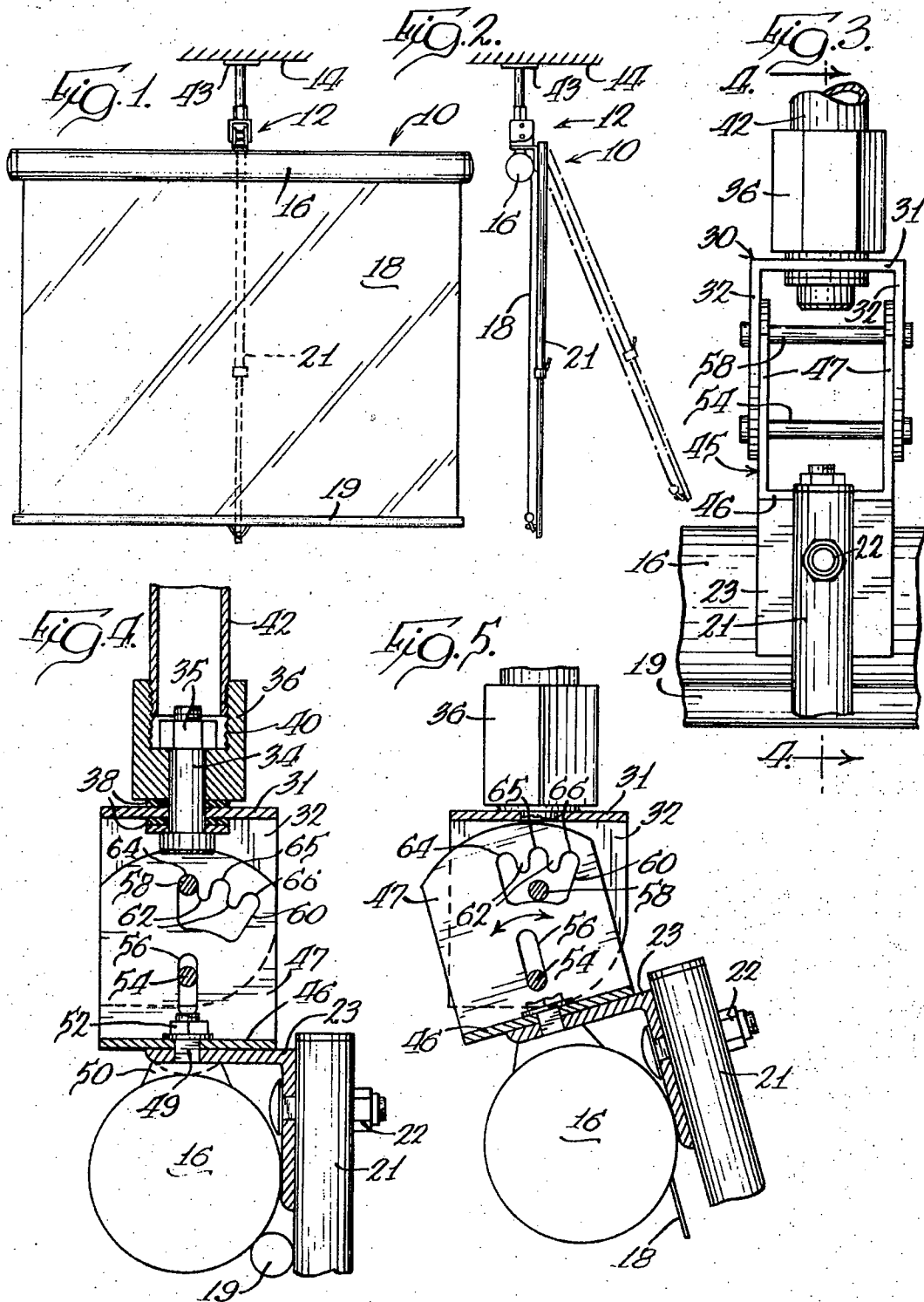
Primary Examiner—J. Franklin Foss
Attorney—Axel A. Hofgren et al.

[57] **ABSTRACT**

A mounting device for supporting a projection screen from a ceiling including a first bracket adapted to be secured to an overhead support, a second bracket adapted to be secured to a casing for a rollable projection screen, means mounting the second bracket on the first bracket for pivotal movement about a horizontal pivot axis, and cooperating detent means on the two brackets for permitting free pivotal movement of the second bracket on the first bracket and for supporting and positively holding the second bracket in angularly adjusted positions such that the screen is inclined from vertical to avoid dimensional distortion which occurs if an image is projected to a screen inclined to the path of projection.

5 Claims, 5 Drawing Figures





MOUNTING DEVICE FOR PROJECTION SCREEN

BACKGROUND OF THE INVENTION

The invention relates to a mounting device for supporting a projection screen from an overhead support such as a ceiling, including means providing for angular adjustment of the screen to one or more positions inclined to a vertical plane, for purposes of avoiding dimensional distortion, sometimes described as "keystoning," which occurs when an image is projected to a viewing screen which is inclined to the path of projection. "Keystoning" occurs with a projector at a relatively low level and a vertical screen disposed at a higher level such that a portion of the image travels further than other portions and therefore assumes a wider dimension, producing an image of trapezoidal outline.

In the past, there has been recognition of the problem of "keystoning" and other distortion in the dimensions of a projected image when the plane of the viewing screen is not perpendicular to the axis of the projected image. For example, U.S. Pat. No. 3,362,671 relates to an overhead suspension assembly for supporting a viewing screen in angularly adjusted positions inclined from the vertical. More particularly, a screen support is pivotally mounted on an overhead clamp clevis, and the clamp is adapted to be appropriately tightened to retain the screen support in angularly adjusted positions where the screen may be disposed perpendicular to the projected image. In such arrangement, the adjustment for the clamp is disposed at an elevated position near the ceiling, and is not readily accessible for release during periods of adjustment. As a result, efforts are made to swing the screen without releasing the clamp. Under these circumstances, the relatively long lever arm from the ceiling to the bottom of the screen contributes toward application of relatively great forces at the place when the suspension assembly is secured to the ceiling, and there is a substantial force tending to tear the suspension assembly away from the ceiling. If the clamp is loosened sufficiently to facilitate easy pivotal movement, then the screen will not stay in angularly inclined positions but tends to swing to the vertical. Thus, there is a need for an overhead mounting device for a projection screen wherein angular adjustment may be made freely and the screen is positively retained in angularly adjusted positions.

U.S. Pat. No. 523,482 relates to an incandescent lamp holder including a lamp support which is pivotally movable on an overhead bracket and spring-biased upwardly to engage ratchet teeth on the overhead bracket when the spring is released, but such a compressible spring is not suitable for supporting a relatively heavy projection screen assembly.

German patent 339,415 shows an overhead lamp suspension apparatus including a lower arm swivelly mounted on an upper support bracket, together with a spring-biased detent plunger on the lower arm adapted to engage apertures in the overhead support, but such an arrangement requires an operating connection from the remotely situated detent plunger to a manually accessible position convenient to reach.

SUMMARY OF THE PRESENT INVENTION

The present invention relates to a mounting device for supporting an overhead projection screen including a lower bracket supported on an upper bracket for pivotal and vertical movement, together with cooperating

detent means on the two brackets for permitting free pivotal movement of the second bracket on the first bracket and also supporting and positively holding the second bracket in adjusted position.

More particularly, the mounting device includes a first bracket comprising an inverted U-shaped member having a crosspiece adapted to be secured to an overhead support and depending legs at opposite sides of the crosspiece, and a second bracket comprising an upright U-shaped member having a crosspiece adapted to be secured to a casing for a viewing screen and upright legs at opposite sides of the crosspiece respectively adjacent the legs of the first bracket.

Preferably, the means mounting the second bracket on the first bracket includes a pivot pin supported on the first bracket and disposed in a vertically elongated slot in the second bracket, so that the second bracket is vertically and pivotally movable on the first bracket.

In the preferred embodiment illustrated, the cooperating detent means on the two brackets includes a detent pin mounted on the first bracket and projecting through a detent recess in the second bracket, and detent teeth in the detent recess on the second bracket for engaging the detent pin on the first bracket to hold the second bracket in angularly adjusted positions.

An important advantage of the present invention resides in the freedom of relatively unrestricted pivotal movement together with provision for positively holding the screen in angularly adjusted positions. The screen is manipulated simply by lifting it sufficiently to disengage the cooperating detent means, whereupon free pivotal movement is permitted. The cooperating detent means are re-engaged simply by lowering the screen again in its angularly adjusted position.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevational view of an extended retractable projection screen in a casing supported by a mounting device embodying the principles of the present invention;

FIG. 2 is a side elevational view of the screen and mounting device illustrated in FIG. 1, also showing the screen in an angularly adjusted position;

FIG. 3 is an enlarged front elevational view of the mounting device illustrated in FIG. 1;

FIG. 4 is a vertical sectional view through the mounting device taken at about the line 4—4 of FIG. 3; and

FIG. 5 is a sectional view similar to FIG. 4, showing the manner in which the lower bracket is adjustable on the upper bracket.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

Referring to the drawings in more detail, FIG. 1 includes an illustration of a projection screen assembly 10 supported by a mounting device 12 from an overhead ceiling 14.

The screen assembly 10 may be similar to that illustrated in U.S. Pat. No. 3,191,663 and need not be described in complete detail herein. In general, it includes a tubular casing 16 in which a screen 18 is adapted to be stored in rolled condition. The lower end of the screen is provided with a relatively rigid reinforcing rod 19 which engages the outside of the casing 16 when the screen is retracted into the casing in rolled storage position as illustrated in FIG. 4. The reinforcing rod thus remains accessible to permit extension of the screen to

the fully extended position illustrated in FIGS. 1 and 2. In order to maintain the screen in the extended position illustrated, use is made of a standard 21 having an upper end secured as by bolt 22 to an angular bracket 23 in turn secured to the casing 16. As in the aforemen- 5
tioned U.S. Pat. No. 3,191,663, the standard may be telescopically collapsible and pivotable about the mounting 22 for compact storage purposes. When the screen 18 is fully extended, a tab or hook at 25 may be secured to the lower end of the standard 21 to hold the screen in extended position against the tension of a screen rewind spring.

The mounting device 12 includes a first upper inverted U-shaped bracket 30 having a crosspiece 31 and depending spaced parallel vertical legs 32. The cross- 15
piece 31 of the bracket 30 is adapted to be mounted on an overhead support. As illustrated herein, the crosspiece 31 is mounted for pivotal movement about a vertical axis by means of a bolt 34 having a head disposed beneath the crosspiece 31, a shank passing through the crosspiece 31, and a nut 35 at the upper end securing an enlarged collar 36 on the bolt. Preferably, antifric- 20
tion washers are provided as at 38 on opposite surfaces of the crosspiece 31 to facilitate angular adjustment of the bracket 30 as desired. The collar 36 has a threaded recess 40 receiving the threaded lower end of a support rod 42 having an enlarged flange 43 at the upper end adapted to be secured to the ceiling 14 as by means of screws or bolts.

In order to support the viewing screen for pivotal ad- 30
justment, a lower bracket 45 is movably mounted on the upper bracket 30. The lower bracket 45 comprises an upright U-shaped member including a crosspiece 46 and spaced parallel upright legs 47 disposed within the upper bracket respectively closely adjacent the legs 32 of the upper bracket. The crosspiece 46 of the lower bracket is secured to the casing 16 by means of a bolt 49 passing through a boss 50 on the tubular casing 16, passing through the upper flange of the angular bracket 23, and passing through the crosspiece 46. The bolt 49 40
is secured in place by a nut 52.

The lower bracket 45 is mounted on the upper bracket 30 by means of a pivot pin or bolt 54 having opposite ends supported in the legs 32 of the upper bracket and passing through vertically elongated slots 56 in the legs 47 of the lower bracket. The pin 54 in the slots 56 permits vertical movement of the lower bracket on the upper bracket and pivotal movement of the lower bracket relative to the upper bracket.

The lower bracket is retained in angularly adjusted positions by means of cooperating detent means on the two brackets including a transverse horizontally dis- 50
posed detent pin or bolt 58 having opposite ends supported in the legs 32 of the upper bracket and passing through vertically elongated and angularly elongated recesses 60 in the legs 47 of the lower bracket at positions disposed above the slots 56. Each of the recesses 60 in the lower bracket is defined at the upper edge by spaced projecting detent teeth as at 62 which define a plurality of intervening detent recesses 64, 65 and 66 adapted respectively to receive the detent bolt 58 with the bracket 45 in angularly adjusted positions.

In operation, it will be seen on viewing FIG. 4 that when the detent bolt 58 is disposed in the detent recess 64, the lower bracket 45 is disposed in a substantially vertical position and the viewing screen 18 when ex- 65
tended will be disposed substantially in a vertical plane.

In order to adjust the viewing screen to angularly in-
clined positions relative to a vertical plane, the stan-
dard 21 may be grasped manually to elevate the entire
screen assembly and the lower bracket 45 to a position
where the detent bolt 58 is free of the detent recesses
64, 65 and 66 so that the lower bracket 45 may be an-
gularly adjusted as illustrated in FIG. 5. If the entire
screen assembly is lowered in a position illustrated in
FIG. 5, the detent bolt 58 will be disposed in detent re-
cess 65 and the screen will be held positively in the an-
gularly inclined position illustrated. The screen may be
freely moved pivotably about the axis of the pivot pin
54 simply by lifting the screen sufficiently to free the
detent bolt 58 from the detent recesses 64, 65 or 66. In
the various angularly adjusted positions, the lower
bracket and the screen assembly are supported on the
upper bracket by means of the detent bolt 58, as a re-
sult of which the adjusted position is maintained posi-
tively by action of gravity without the need of supple-
mentary biasing means or detent means separate from
the brackets.

I claim:

1. A ceiling mount for hanging a projection screen in
angularly adjusted positions, comprising,

- a. a first bracket of inverted U-shape having a cross-
piece adapted to be secured to a ceiling and de-
pending legs at opposite sides of the crosspiece,
- b. a second bracket of upright U-shape having a
crosspiece adapted to be secured to a casing for a
rollable projection screen and upright legs at oppo-
site sides of the crosspiece,
- c. means mounting the second bracket on the first
bracket for pivotal movement about a horizontal
pivot axis and for vertical movement relative to the
pivot axis,
- d. a horizontally disposed detent pin on the first
bracket projecting into an enlarged aperture in one
leg of the second bracket permitting vertical move-
ment and angular movement of the second bracket
on the first bracket, and
- e. a plurality of angularly adjacent detent recesses in
said one leg of the second bracket opening into said
aperture for receiving said detent pin to hold the
second bracket positively in angularly adjusted po-
sitions inclined slightly from vertical while permit-
ting free vertical and pivotal movement of the sec-
ond bracket between adjusted positions.

2. A ceiling mount for hanging a projection screen in
angularly adjusted positions, comprising,

- a. a first bracket of inverted U-shape having a cross-
piece adapted to be secured to a ceiling and de-
pending legs at opposite sides of the crosspiece,
- b. a second bracket of upright U-shape having a
crosspiece adapted to be secured to a casing for a
rollable projection screen and upright legs at oppo-
site sides of the crosspiece,
- c. a horizontally disposed pivot pin on the first
bracket mounting the second bracket for pivotal
movement and vertical movement,
- d. a horizontally disposed detent pin on the first
bracket, and
- e. a plurality of detent recesses on the second bracket
facing downwardly for receiving said detent pin to
hold the second bracket positively in angularly ad-
justed positions while permitting free vertical and
pivotal movement of the second bracket between
adjusted positions.

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3. A mounting device for hanging a projection screen in angularly adjusted positions, comprising,
- a. a first bracket adapted to be secured to an elevated support and having spaced parallel legs,
 - b. a second bracket adapted to be secured to a casing for a projection screen and having spaced parallel legs adjacent the legs of the first bracket,
 - c. a horizontally disposed pivot pin having opposite ends mounted in the legs of the first bracket and passing through vertically elongated slots in the legs of the second bracket for mounting the second bracket for pivotal movement and vertical movement,
 - d. a horizontally disposed detent pin having opposite ends mounted in the legs of the first bracket and passing through vertically elongated and angularly elongated recesses in the legs of the second bracket, and
 - e. a plurality of angularly spaced detent teeth projecting downwardly in each of the detent recesses on the second bracket for engaging said detent pin to hold the second bracket in angularly adjusted positions.
4. A ceiling mount for hanging a projection screen in angularly adjusted positions, comprising,
- a. a first bracket of inverted U-shape having a crosspiece adapted to be secured to a ceiling support and depending legs at opposite sides of the crosspiece,
 - d. a second bracket of upright U-shape having a crosspiece adapted to be secured to a casing for a retractable projection screen and upright legs at

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- opposite sides of the crosspiece positioned between the depending legs of the first bracket,
 - c. a horizontally disposed pivot pin having opposite ends secured on the legs of the first bracket,
 - d. vertically elongated slots in the legs of the second bracket receiving the pivot pin and mounting the second bracket for vertical movement and pivotal movement relative to the pivot pin, and
 - e. cooperating detent means on the two brackets for positively holding the second bracket in adjusted positions and for permitting free pivotal movement of the second bracket in opposite directions responsive to movement of the second bracket on the first bracket.
5. A ceiling mount as defined in claim 4, wherein said cooperating detent means comprises
- a horizontally disposed detent pin having opposite ends secured in the legs of the first bracket above the pivot pin,
 - an enlarged aperture in each leg of the second bracket receiving the detent pin and permitting vertical movement and angular movement of the second bracket on the first bracket, and
 - a plurality of angularly spaced detent recesses in the legs of the second bracket opening into each aperture for receiving said detent pin to hold the second bracket positively in angularly adjusted positions while permitting free vertical and pivotal movement of the second bracket between adjusted positions.

* * * * *

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EXHIBIT C

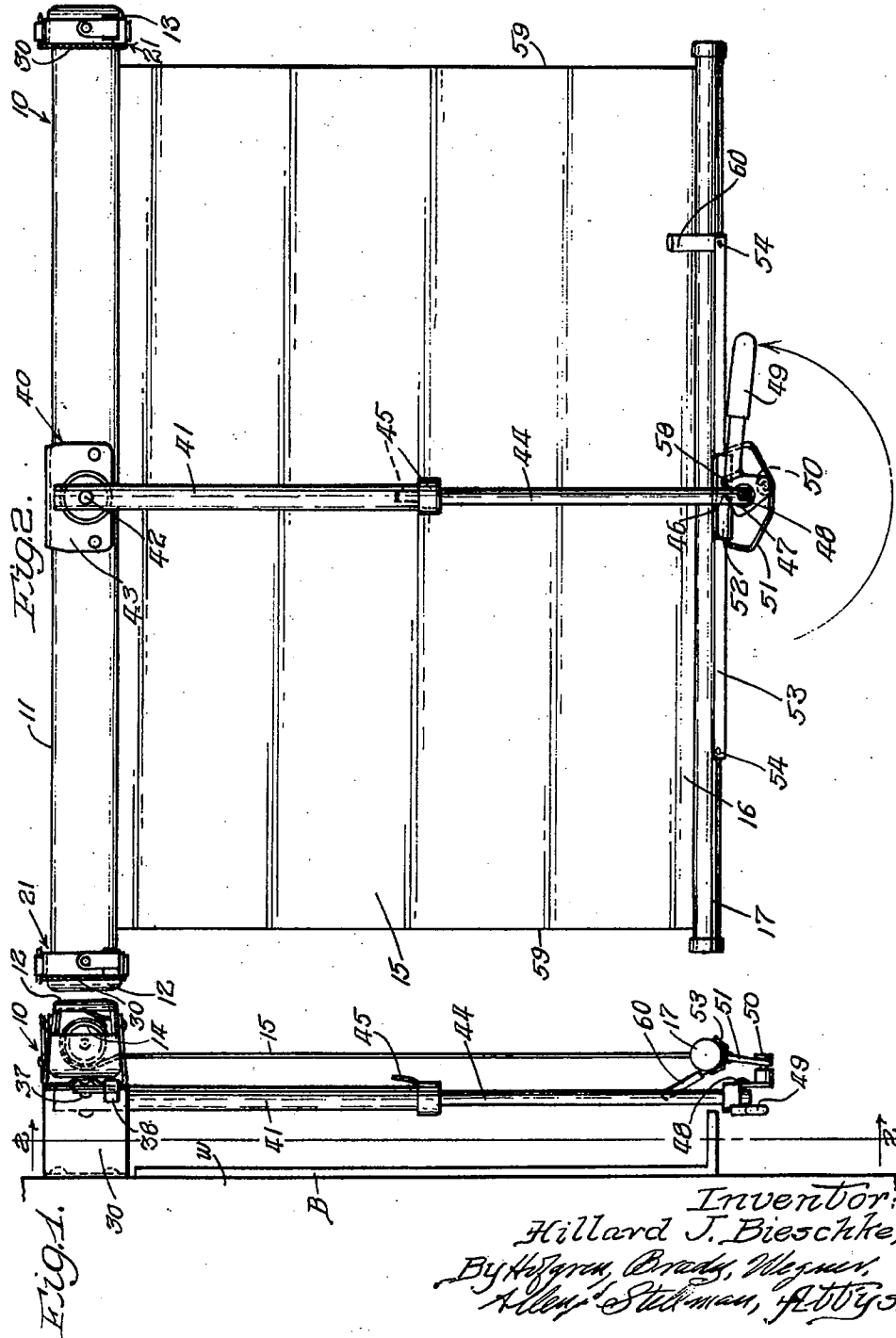
June 29, 1965

H. J. BIESCHKE
PROJECTION SCREEN

3,191,663

Filed July 26, 1962

3 Sheets-Sheet 1



June 29, 1965

H. J. BIESCHKE

3,191,663

PROJECTION SCREEN

Filed July 26, 1962

3 Sheets-Sheet 2

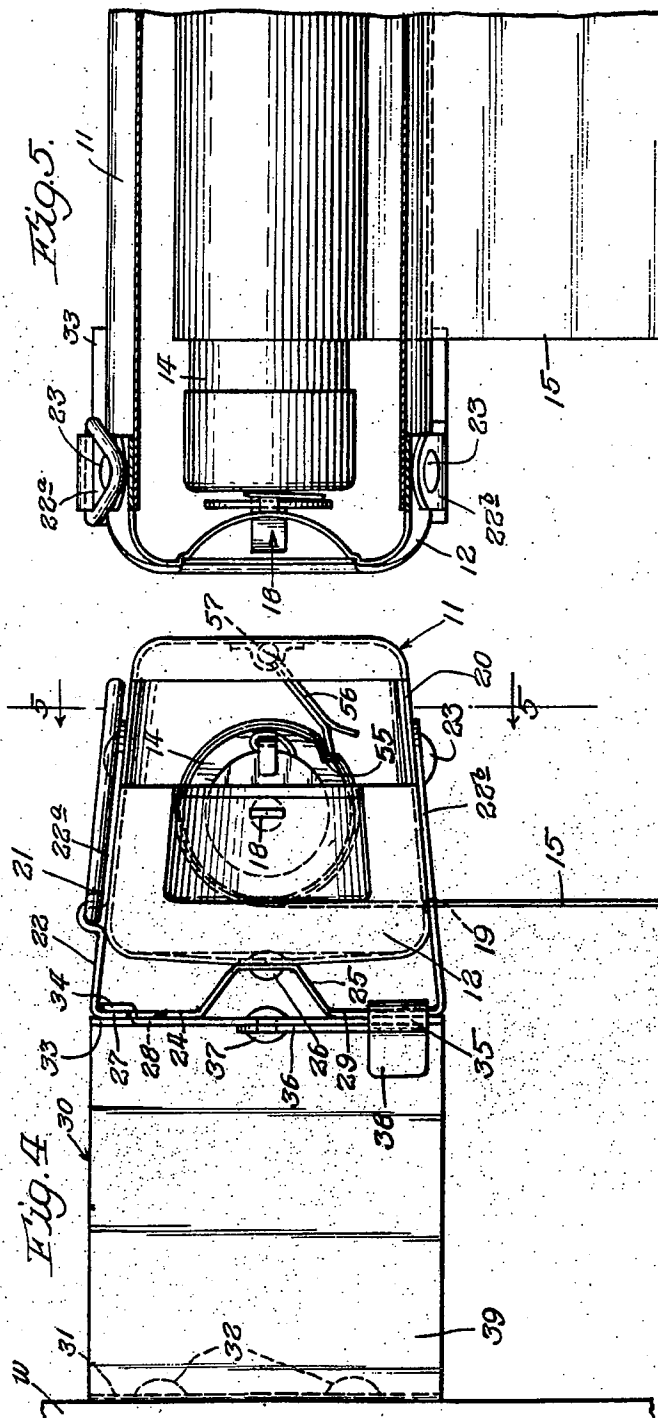
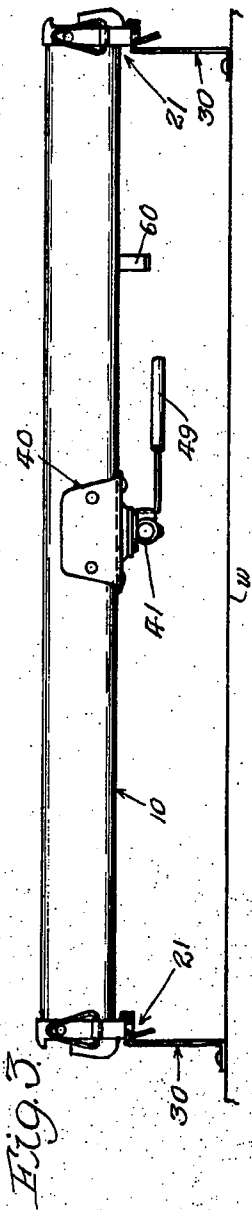
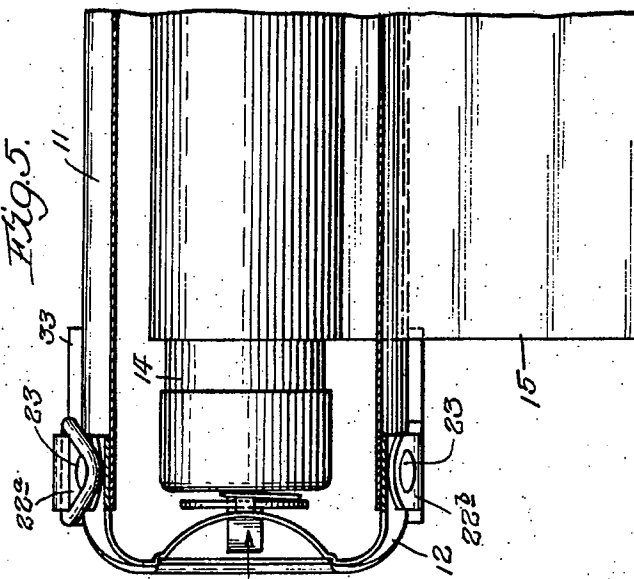
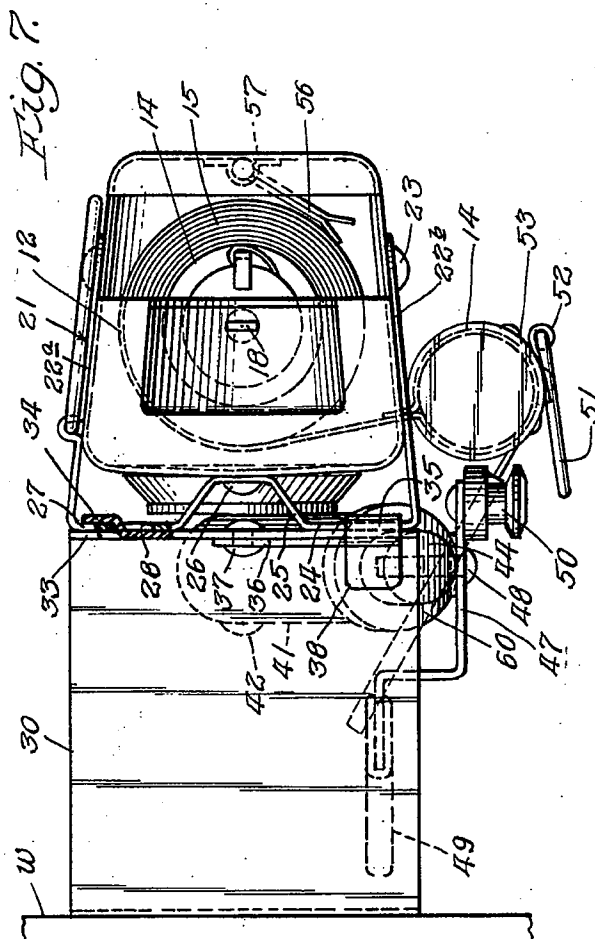
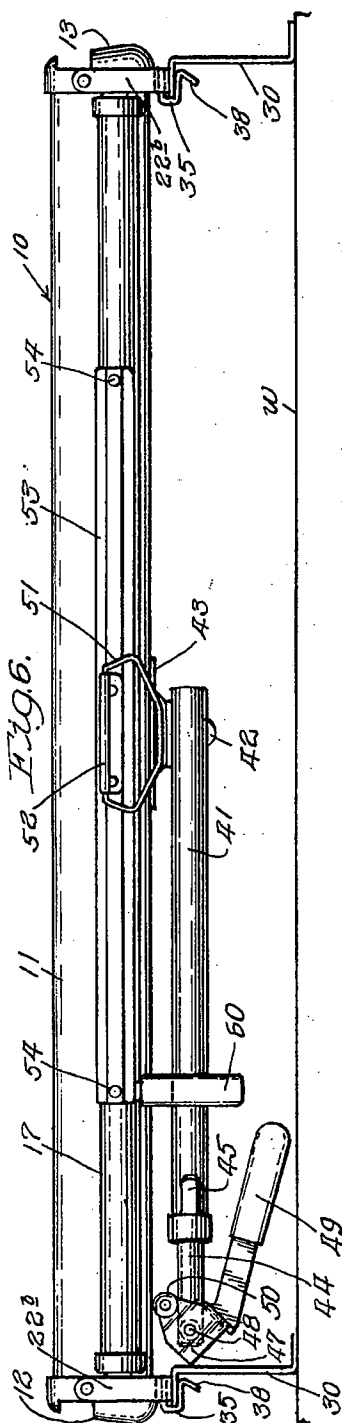


Fig. 5



Filed July 26, 1962

3 Sheets-Sheet 3



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3,191,663

PROJECTION SCREEN

Hillard J. Bieschke, Schiller Park, Ill., assignor to Knox Manufacturing Company, a corporation of Illinois
Filed July 26, 1962, Ser. No. 212,672
6 Claims. (Cl. 160-24)

This invention relates to projection screens, and in particular, to projection screens arranged for wall mounting.

Picture projection screens adapted to be supported upon floor standards of the tripod type have commonly been provided with stretcher means for holding the screen fabric in a tautly extended position whereby the screen may be disposed accurately flatly in a vertical plane. However, wall mounted screen apparatus have not been entirely satisfactory in providing such a taut viewing screen surface. The present invention comprehends such a wall mounted screen apparatus including improved means for mounting the screen and for retaining the screen in the desired taut condition for viewing.

Thus, a principal feature of the present invention is the provision of a new and improved picture screen apparatus.

Another feature of the invention is the provision of such a screen apparatus having improved bracket means for mounting the apparatus on a wall, such as adjacent a school blackboard.

A further feature of the invention is the provision of such a screen apparatus having new and improved means for holding the screen tautly in an extended viewing position.

Still another feature of the invention is the provision of such picture screen apparatus including means associated with the screen for releasably retaining the holding means or supporting standard in a retracted position adjacent the screen casing of the apparatus.

A yet further feature of the invention is the provision of such a picture screen apparatus wherein the supporting standard or means for holding the screen taut is biased to an extended position, and the apparatus is arranged to have the holding means move automatically to the extended position when the screen is withdrawn from the casing to open viewing position.

Other features and advantages of the invention will be apparent from the following description taken in connection with the accompanying drawings wherein:

FIGURE 1 is a side elevation of a picture screen apparatus embodying the invention mounted on a wall adjacent a conventional blackboard thereon;

FIGURE 2 is a rear elevation thereof taken substantially along the line 2-2 of FIGURE 1;

FIGURE 3 is a top plan view thereof;

FIGURE 4 is an enlarged fragmentary side elevation illustrating the bracket means in greater detail;

FIGURE 5 is a fragmentary vertical section taken substantially along the line 5-5 of FIGURE 4;

FIGURE 6 is a bottom view of the picture screen apparatus in a retracted position; and

FIGURE 7 is a side elevation of the picture screen apparatus in the retracted position.

In the exemplary embodiment of the invention as disclosed in the drawing, a picture screen apparatus generally designated 10 is shown to comprise a casing 11 having a pair of end caps 12 and 13 carrying therebetween a roller 14 to which is secured a picture screen 15. The screen 15 is secured to the roller 14 in the conventional manner, being wrapped around the roller, as best seen in FIGURES 1 and 4, and having an outer or free end portion 16 provided with a reinforcing rod 17. Roller 14 is provided with a conventional spring biased device 18 normally urging the screen into a retracted arrangement or closed position wrapped around the roller within the cas-

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ing 11. The screen may be pulled against the bias of device 18 through an elongated opening 19 in the bottom wall 20 of the casing 11 to an extended viewing arrangement or position, as shown in FIGURES 1 and 2.

The above described structure of picture screen apparatus 10 is substantially conventional. The present invention comprehends an improved bracket structure generally designated 21 associated therewith for supporting the apparatus on a wall W. The bracket structure 21 is arranged to dispose the apparatus 10 forwardly of the wall sufficiently to clear structure thereon, such as a conventional schoolroom blackboard and the chalk tray associated therewith.

More specifically, the bracket structure 21 includes a first U-shaped bracket 22 having leg portions 22a and 22b secured to the casing 11 by suitable means such as screws 23. The bracket 22 straddles the casing, as best seen in FIGURE 4, and the bight portion 24 thereof is provided with an intumed middle section 25 which is secured to the casing 11 by suitable means such as screws 26. The upper portion 27 of bight 24 extending between middle section 25 and leg 22a is provided with a keyhole slot 28. A bight portion 29 extends between middle section 25 and lower leg 22b.

Each bracket structure 21 further includes a wall bracket 30 having a rear flange 31 adapted to be secured in facial engagement to the wall W by suitable means such as screws 32. The forward end of the bracket defines a turned flange 33 having a hook 34 formed therefrom to extend through slot 28 and retain the upper portion of the flange 33 in facial engagement with the bight portion 27 of bracket 22. The lower portion of the flange 33 is releasably retained in facial engagement with the lower bight portion 29 by means of a clip 35 carried on an arm 36 pivotally secured to the mid-portion of the flange 33 by suitable means such as rivet 37. A thumb piece 38 is formed at the end of arm 36 for manipulating the arm to cause the clip 35 to straddle the lower end of the flange 33 and the bight portion 29 of bracket 22 in a locking position, as shown in FIGURE 4. Thus, slot 28 effectively defines a downwardly facing shoulder on bracket 22, and leg 22b effectively defines an upwardly facing shoulder thereon. Hook 34 effectively defines an upwardly facing shoulder selectively engageable with the downwardly facing shoulder defined by slot 28 and the clip 35 effectively defines a downwardly facing shoulder confronting leg 22b. This arrangement of the shoulder defining means effectively locks the brackets in association when arranged as shown in FIGURE 4 to prevent accidental disengagement of the screen casing from the wall brackets.

Should it be desired to remove the screen, however, from the bracket 30 this can be simply effected by pivoting the clip away from its straddling association with bight portion 29 of bracket 22, and raising the casing to move the slot 28 upwardly until hook 34 is aligned with the slot, thereby permitting a forward movement of the casing whereby the bracket 22 is disassociated from the bracket 30. Mounting of bracket 22 on bracket 30 is effected by a simple reversing procedure wherein the bracket 22 is first hooked onto hook 34 by suitable passage of the hook through the slot 28 and subsequent slight downward movement of the bracket to the position of FIGURE 4. The arm 36 is then pivoted by suitable movement of thumb piece 38 to cause clip 35 to straddle the flange 33 and bight portion 29.

The middle portion 39 of bracket 30 is preferably relatively long so as to space the casing 11 sufficiently from wall W to assure clearance of the picture screen apparatus with blackboard B, as best seen in FIGURE 1. As shown, the brackets 30 may be installed directly above the blackboard so as to permit a disposition of the screen

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15 directly in front of the blackboard at the normal viewing elevation.

As indicated briefly above, the invention further comprehends means for retaining the screen 15 in a taut extended arrangement, as shown in FIGURES 1 and 2. This means herein comprises an adjustable standard 40 having a first tubular portion 41 pivotally connected by a pivot means 42 to a bracket 43 carried on the mid-portion of the casing 11. Telescopically receivable within tubular portion 41 is a connecting portion or rod 44 which is arranged to slide freely to an extended arrangement, as shown in FIGURES 1 and 2. A locking device 45, herein comprising a conventional Swedish clamp, is provided on the tubular portion 41 permitting such free sliding movement of rod 44 to the extended arrangement, but requiring suitable release or manipulation to permit retraction of the rod 44 back into tubular member 41.

The distal or free end 46 of rod 44 carries a screen stretching member 47 pivotally mounted thereon by means of a pivot 48 and having connected thereto an operating handle 49. The stretching member is provided with an annularly grooved post 50 which is slidably engageable with a bail 51 secured to the screen rod 17 by a bracket 52 carried on a spring member 53 secured to the rod 17 at its opposite ends by suitable means such as screws 54.

The roller 14 is adapted to be stopped automatically after a predetermined number of convolutions of screen material are unwound therefrom in pulling the screen material to open position. The roller 14 is provided with a recess 55 adjacent one end thereof which is adapted to receive a spring stop 56 carried on the housing 11 by a suitable bracket 57. The spring stop is biased to bear against the screen wrapped around the roller, and when the screen is withdrawn a predetermined number of convolutions from the roller, it moves into the recess in the roller 55 thereby automatically limiting the withdrawal rotation of the roller 14.

Post 50 is positioned off center of the pivot 48 on stretching member 47 so as to force bail 51 downwardly slightly beyond its normal position when the screen is manually withdrawn from the casing. The spring mounting of the bail on member 53 allows sufficient yielding to permit the post to be swung to the position of FIGURE 2 slightly beyond the center, or maximum downward, position of the post. The stretching member 47 is prevented from moving beyond this over-centered position by a stop 58 which abuts the distal end 46 of the rod 44, as shown in FIGURE 2. Thus, the screen 15 is tautly retained in the extended arrangement of FIGURE 2, assuring the accurate disposition of the screen flatly in an upright plane parallel to wall W. As the connection of the spring member 53 to the rod 17 is adjacent the opposite ends of the rod 17, the vertical edges 59 of the screen are maintained taut, thereby assuring the desired planar arrangement of the screen.

Referring now to FIGURE 6, a further feature of the invention is illustrated. More specifically, the screen reinforcing rod 17 is further provided with an arm 60 which extends perpendicular thereto and rearwardly from the flat plane of the screen, as shown in FIGURE 1. Thus, in returning the picture screen apparatus to the retracted arrangement, wherein the screen 15 is disposed substantially fully within the casing 11, the arm 60 serves as a means for retaining the supporting standard 40 in a retracted position adjacent the casing. Thus, as illustrated, the arm 60 extends under the tubular portion 41 of the standard 40 when it is pivoted to a substantially horizontal position and holds the arm against the gravitational bias thereof in the retracted position. The spring means 18 biasing the roller to the retracted position is made sufficiently strong to offset the tendency of the standard to pivot to the extended arrangement of FIGURE 2.

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In the illustrated embodiment, standard 40 is freely pivotable on pivot 42 so that it will swing automatically to the extended arrangement of pivot 42 when the screen is withdrawn to its extended arrangement. Further, the locking means 45 is disclosed as comprising a Swedish clamp herein. Obviously, other suitable locking means may be employed. The illustrated Swedish clamp, however, provides the highly desirable features of permitting locking of the rod 44 at any desired amount of extension from member 41. Further, the Swedish clamp 45 may be arranged to maintain the rod 44 in a single position of rotation about its longitudinal axis, thereby assuring a forward extension of the post 50 when the standard is arranged in the extended arrangement of FIGURE 2.

It is believed that the operation of picture screen 10 is obvious from the above description of the structure. Briefly, however, the apparatus is readily mounted on bracket 30 by engagement of hooks 34 with the brackets 22 in slots 28 thereof. The brackets 22 are locked in association with brackets 30 by a downward pivoting of the arm 36 to engage the clips 35 with the bight portion 29 of the bracket 22. The screen 15 is then withdrawn from the casing 11 by a simple downward urging of bail 51 whereupon, in the illustrated embodiment, the standard 40 automatically pivots downwardly from the retracted position of FIGURE 6 to the extended arrangement of FIGURES 1 and 2. The post 50 is then engaged with the bail 51 and arm 49 is manipulated to swing the stretching member 47 to a slightly overcentered position, as shown in FIGURE 2, thereby holding the screen in a taut condition.

To restore the apparatus to the retracted arrangement, the operator merely reversely pivots arm 49 and removes the post 50 from engagement with bail 51. Swedish clamp 45 is then operated to permit a retraction of rod 44 to fully within tubular member 41, and the standard is pivoted to the retracted position of FIGURE 6. The spring means 18 is permitted to draw the screen back into casing 11 about the roller 14 until the rod 17 abuts the casing 11 adjacent opening 19. At this time, arm 60 underlies the standard 40 and automatically retains the standard in the retracted position. If it is desired to remove the apparatus from brackets 30, the clips 35 are removed from engagement with bight portions 29 of bracket 22 by suitable release or manipulation of thumb piece 38 to pivot the arms 36 suitably, and the apparatus is elevated sufficiently to unhook the bracket portions 27 from the hooks of bracket 30, whereupon the apparatus may be removed from association with bracket 30, as desired.

While I have shown and described one embodiment of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. In a wall-mounted picture screen apparatus including a casing and a picture screen having an inner portion secured to said casing, said screen being selectively extendible from the casing and having an outer portion, apparatus for tautly retaining the screen in an extended arrangement comprising: a telescoping supporting standard pivoted to the casing and having a connecting portion, said standard being biased toward said screen-holding arrangement; means for selectively locking said standard in a screen-holding arrangement wherein said connecting portion is spaced from said casing a distance substantially similar to the distance that said outer portion of the screen is spaced from the casing when the screen is in said extended arrangement; means on the standard selectively engaging said outer portion of the screen for holding the screen tautly in said extended arrangement; and means on the screen for releasably holding the standard against the bias thereof when the

screen is in a retracted position substantially fully within the casing.

2. In a wall-mounted picture screen apparatus including a casing and a picture screen having an inner portion secured to said casing, said screen being selectively extendible from the casing and having an outer portion, apparatus for tautly retaining the screen in an extended arrangement comprising: a telescoping extensible supporting standard pivoted to the casing and having a connecting portion movable relative to said standard to different positions of extended adjustment; said standard being biased toward said screen-holding arrangement; means for selectively locking said standard in a screen-holding arrangement wherein said connecting portion is spaced from said casing a distance substantially similar to the distance that said outer portion of the screen is spaced from the casing when the screen is in said extended arrangement; means on the standard selectively engaging said outer portion of the screen for holding the screen tautly in said extended arrangement; means for biasing the screen toward said retracted position, the biasing force of said screen biasing means being greater than the biasing force of the standard biasing means; and means on the screen for releasably holding the standard against the bias thereof when the screen is in a retracted position substantially fully within the casing.

3. In a wall-mounted picture screen apparatus including a casing and a picture screen having an inner portion secured to said casing, said screen being selectively extendible from the casing and having an outer portion, apparatus for tautly retaining the screen in an extended arrangement comprising: a telescoping extensible standard permanently pivotally carried on the casing and having a distal connecting portion; means for selectively locking said standard against retraction in different extended, screen-holding positions wherein said connecting portion is spaced from said casing a distance substantially similar to the distance that said outer portion of the screen is spaced from the casing when the screen is in said extended arrangement, said locking means yieldably responsive to extension of the standard when the standard is pivoted to a vertically depending position; means on the standard engaging said outer portion of the screen for holding the screen tautly in said extended arrangement; and means on the screen for selectively holding the standard in a pivotally retracted position adjacent the casing when the screen is in a retracted arrangement substantially fully within the casing.

4. In a wall-mounted picture screen apparatus including a casing and a picture screen having an inner portion secured to said casing, said screen being selectively extendible from the casing and having an outer portion, apparatus for tautly retaining the screen in an extended arrangement comprising: means for securing said screen casing to a substantially planar surface; a telescoping supporting standard pivoted to the casing and having a connecting portion, said standard being biased toward said screen-holding arrangement; means for selectively locking said standard in a screen holding arrangement wherein said connecting portion is spaced from said casing a distance substantially similar to the distance that said outer portion of the screen is spaced from the casing when the screen is in said extended arrangement; stretching means on the standard selectively engaging said outer portion of the screen for stretching the screen tautly in said extended arrangement to provide a smooth

planar surface; and means for releasably holding the standard against pivoting relative to the casing when the screen is in a retracted position substantially fully within the casing.

5. In a wall-mounted picture screen apparatus including a casing and a picture screen having an inner portion secured to said casing, said screen being selectively extendible from the casing and having an outer portion, apparatus for tautly retaining the screen in an extended arrangement comprising: means for securing said screen casing to a substantially planar surface; a telescoping extensible supporting standard pivoted to the casing and having a connecting portion movable relative to said standard to different positions of extended adjustment; said standard being biased toward said screen-holding arrangement; means for selectively locking said standard in a screen-holding arrangement wherein said connecting portion is spaced from said casing a distance substantially similar to the distance that said outer portion of the screen is spaced from the casing when the screen is in said extended arrangement; stretching means on the standard selectively engaging said outer portion of the screen for stretching the screen tautly in said extended arrangement; means for biasing the screen toward said retracted position, the biasing force of said screen biasing means being greater than the biasing force of the standard biasing means; and means for releasably holding the standard against the bias thereof from pivoting relative to the casing.

6. In a wall-mounted picture screen apparatus including a casing and a picture screen having an inner portion secured to said casing, said screen being selectively extendible from the casing and having an outer portion, apparatus for tautly retaining the screen in an extended arrangement, comprising: means for securing said screen casing to a substantially planar surface; a telescoping extensible standard pivotally carried on the casing and having a distal connecting portion; means for selectively locking said standard against retraction in different extended, screen-holding positions wherein said connecting portion is spaced from said casing a distance substantially similar to the distance that said outer portion of the screen is spaced from the casing when the screen is in said extended arrangement; said locking means yieldably responsive to extension of the standard when the standard is pivoted to a vertically depending position; stretching means on the standard engaging said outer portion of the screen for stretching the screen tautly in said extended arrangement; and means on the screen for selectively holding the standard in a pivotally retracted position adjacent the casing when the screen is in a retracted arrangement substantially fully within the casing.

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HARRISON R. MOSELEY, *Primary Examiner.*